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TABLE OF CONTENTS

MEDICAL ABSTRACTS

Non-Traumatic Urologic Emergencies.....	3
Management of Urinary Tract Injuries	7
Gallstones in Young Adults	9
Therapy of Schizophrenia - A Major Joint Study Report.....	13
Radiation Medicine: Attention - All AEC Licensed Naval Hospitals	15

MISCELLANY

Notice of Drug Withdrawal	17
Important Drug Warnings	18

FROM THE NOTE BOOK

Meeting of the American College of Physicians	19
Wanted: Articles for Training Bulletin	20
MSC Training Announcement	20
A. P. A. To Hold Navy Luncheon..	21
BUPERS REPORT 1080-14.....	21

DENTAL SECTION

Incisal Guidance in Oral Rehabilitation.....	22
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DENTAL SECTION (Cont'd)

Incidence and Distribution of Dental Caries in the U. S.	23
Improved Dental Cements	23
Fluoride Useful in Combating Bone Diseases	24
AMA Position on Fluoridation	24
Professional Notes	25

PREVENTIVE MEDICINE

Measles Epidemic in the Bonin Islands	27
Mianeh Fever.....	28
Control of Gonococcal Infection...	28
Time-Temperature Effects on Salmonellae and Staphylococci in Food.....	31
Epidemiology of Salmonellosis....	31
Know Your World	34
Research Projects Completed by Preventive Medicine Unit No. 2	35
Malaria Eradication in 1962.....	36

RESERVE SECTION

Attention: Reserve Nurse Corps Officers on Inactive Duty.....	39
Reservists Eligible for Tax Deductions.....	39

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Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda, Maryland 20014, giving full name, rank, corps, and old and new addresses.

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

Non-Traumatic Urologic Emergencies

LT W.P. Urschel MC USN*. Proceedings of the Monthly Staff Conferences of the U.S. Naval Hospital, NNMC, Bethesda, Md., 1962 - 1963.

The definition of "emergency," according to Webster, is a "sudden or unexpected occurrence." In Urology, this may mean something should be done within an hour's time as with torsion of the testis or with gross hematuria; or it may mean the proper time for intervention should be within 24 to 72 hours, as in the case of some calculi and some traumatic injuries.

I. Gross Hematuria

Hematuria is a danger signal which cannot be ignored. It is important to know whether urination is painful, whether there are associated signs of bladder irritability, and whether blood is seen in all, or in only part, of the urinary stream. Initial hematuria suggests an anterior urethral lesion; terminal hematuria usually comes from the posterior urethra, bladder neck, or trigone; and total hematuria indicates bleeding from the bladder or upper tracts. Hematuria associated with renal colic suggests ureteral stone, although a clot from a bleeding renal tumor can cause the same type of pain. Nonspecific or tuberculous infection is frequently associated with hematuria. A stone in the bladder may cause hematuria, but usually there are associated infection and symptoms of bladder neck obstruction or cystocele. When a tumor of the bladder ulcerates, it is often complicated by infection and bleeding and, thus, symptoms of cystitis and hematuria are also compatible with neoplasm.

Gross total painless hematuria must be regarded as a symptom of tumor of the bladder or the kidney until proved otherwise, and this constitutes a real urologic emergency. Cystoscopy is indicated at once since this type of hematuria is often intermittent and may not recur for months. Statistically, there is more than a 90% chance of finding the source of the bleeding if the patient can be attended while this is still occurring. Complacency, because the bleeding stops, should be condemned. This department cannot suggest too strongly the immediate referral of all patients seen with gross total painless hematuria.

II. Testicular Tumors

A mass which cannot be definitely differentiated from the testis must be regarded as a tumor until proved otherwise. Because of the poor prognosis of testicular tumors and because their maximum incidence occurs in the 20 to 35-year age group, conservative treatment in cases of a testicular mass consists of immediate surgery through an inguinal incision where the blood supply from the testis can be controlled and the testis can be examined by

* Resident in Urology at the Hospital

direct vision. A review of the literature reveals some differences in survival statistics but, in general, it is as follows: seminoma - 90 to 95% five-year survival rate; teratoma - 60 to 70% five-year survival rate.

Patients with embryonal carcinoma have a 30 to 40% five-year survival and patients with the most deadly choriocarcinoma have only a 5 to 10% chance of living two years.

Clinically, testicular tumors are usually painless, although some 40% of patients have noted moderate discomfort at some time. These tumors vary from small nodules of the size of a pea to 5-pound diffuse enlargements of the testis. The patient's attention is usually directed to these nodules after some trauma so that history of present illness is somewhat unreliable. There are no early symptoms except increase in size and hardness of the testis which, if the tumor is not first noted by symptoms of metastasis, may cause a dull ache in the lower abdomen or groin due to a drag on the spermatic cord. This is often dismissed as a "strain," since elevation produces relief. Many of these tumors metastasize to the para-aortic nodes before a primary lesion is found. Any young male with a dull ache in the lumbar area or groin and who considers it important enough to mention to a doctor should have a thorough examination of the scrotal contents.

Differential diagnosis includes the following:

A hydrocele may be quite tense and firm, but usually will permit transillumination. It should be remembered, however, that 10 to 15% of testicular tumors, particularly the slower-growing varieties, will also have some degree of hydrocele which can be transilluminated.

A spermatocele is a free cystic mass lying above and behind the testis and, in most cases, presents no problem.

Epididymitis, where acute, is exceedingly painful and is usually accompanied by some abnormal urinary findings. If seen in the early stages, it can easily be differentiated from the testis itself. Chronic epididymitis and tuberculous epididymitis present somewhat more of a problem but should, on careful examination, be separable from the testis.

A gumma is a rare nontender testicular lesion which causes enlargement; a history of syphilis and a positive serologic test suggest the diagnosis.

Mumps orchitis is usually much more painful than a tumor and almost always is accompanied by parotitis.

Torsion of the spermatic cord (discussed in detail below) is an emergency of adolescence. Often, in addition to being more painful the epididymis can be felt anterior to the testis. In addition, elevation of the testis increases the torsion and pain.

It is imperative that early diagnosis of testicular tumors be made. An average period of three months elapses from the first symptoms to the time when the patient sees a doctor, but recognition of the tumor by the doctor generally will take six to nine months. In Campbell's series of more than 4000 cases, 88% had demonstrable metastases by the time surgery was performed. At this installation, any intra-scrotal swelling which cannot be

definitely identified or separated from the testis is treated as an emergency, and surgery is performed within 24 hours.

III. Ureteral Colic

This is one topic with which most physicians are quite familiar, and concerning which the general surgical residents and Ob/Gyn residents are all familiar. Clinically, pain from calculi is usually abrupt in onset, and becomes severe within a matter of minutes. There are two types of pain: (1) radiating colicky agonizing pain from hyperperistalsis of the smooth muscle, and (2) the somewhat constant ache in the costovertebral area and flank from obstruction and capsular tension. The radiation of the pain, at times, suggests the position of the stone. If it is high in the ureter, the colic may radiate to the testicle. As the stone migrates toward the bladder, the pain may spread to the scrotum or the vulva. At times, the pain comes on more slowly and may be felt anteriorly. Occasionally, it may be quite mild. Gastrointestinal symptoms are usually associated with ureteral stones; nausea and vomiting almost always occur. Abdominal distention due to paralytic ileus is usually present. Hematuria is seen grossly in one-third of cases, and hematuria, microscopically, in almost every case.

Even in the absence of infections, symptoms of urgency and frequency may develop as the stone approaches the bladder. Existing chronic renal infection may be exacerbated by ureteral obstruction; chills, fever, and upper back pain may be noted. The patient is usually in agony, pacing the floor rather than lying quietly in bed (as a patient with peritoneal irritation is apt to do). Nothing he does gives him relief. His skin may be cold and clammy and he may show signs of mild shock.

Other urologic causes of ureteral colic include:

Passage of crystals down the ureter may occur during an exacerbation of gout or in oxaluria with excessive ingestion of high oxalate foods. Signs and symptoms are the same as with stone, and hematuria is just as common. X-Ray findings are usually negative, however, and the presence of many crystals in the urine may suggest the etiology of the colic.

A tumor of the kidney or renal pelvis may bleed, and a clot or piece of necrotic tumor tissue may pass down the ureter. This will simulate perfectly a ureteral stone. Excretory urograms would be expected to show a space-occupying lesion in the kidney and, often, a "negative shadow" in the ureter. A ureteral tumor is often partially obstructive and may cause colic. Hematuria is common.

Acute pyelonephritis may start so abruptly and the pain may be so acute as to suggest the presence of a stone. The finding of pyuria and bacteriuria with normal urograms should establish the diagnosis.

The nonurologic entities often confused with ureteral colic:

An attack of colic on the right side must be differentiated from biliary colic or acute appendicitis, and symptoms from a lower left ureteral stone from

diverticulitis. Symptoms simulating acute intestinal obstruction or other acute intraperitoneal catastrophies may be produced by an attack of colic located on either side. Biliary colic may be differentiated by history of present illness and the absence of tenderness in the right renal area. The pain in gallbladder colic is usually manifested in the back or right shoulder. Local examination reveals tenderness over the gallbladder with rectus muscle spasm. Microscopically, the urine rarely shows red cells.

Acute appendicitis, at times, may be more difficult to differentiate from a ureteral calculus. Again, significant data are elicited from the history. In acute appendicitis, the point of maximum tenderness is usually localized to the right lower quadrant, with muscular spasm, rigidity, and rebound tenderness frequently present. Tenderness is usually absent over the kidney and the general constitutional symptoms may be more pronounced. The pulse is rapid and the temperature tends to be higher. The white count is most often higher than with a ureteral stone unless prior urinary tract infection is present. There are routinely no red cells seen in the urine in appendicitis, but this rule, unfortunately, often is broken.

In the presence of general abdominal distention, failure to pass gas per rectum, and vomiting, one may suspect intestinal obstruction.

In women, differentiating ureteral colic (when the stone is low) from an acute ovarian problem may be difficult. In many cases, on bimanual recto-vaginal examination, a calculus actually may be palpated and the problem resolved.

IV. Torsion of the Testis

The fourth and last emergency discussed in this article is torsion of the spermatic cord or the testis. This is a rotational strangulation of the blood supply to the testis which, if not treated quickly, (within an hour or less) will result in testicular atrophy or in gangrene. This is not a common problem, but a fast accurate diagnosis is imperative, and the physician's index of suspicion is all-important. Generally, this is considered to be a problem of boys near the age of puberty, but this may be due to mistaken diagnoses of acute epididymitis later in life. The undescended testis is prone to undergo torsion, and half of the torsion cases are those of undescended testes.

Clinically, one should consider the diagnosis when a young patient suddenly develops severe pain in one testis, reddening and swelling of the scrotal skin, lower abdominal pain, and nausea and vomiting. Examination reveals a swollen tender testis which is usually retracted upwards, and if felt in the early stages, has the epididymis anterior to the testis. The differential diagnosis includes acute epididymitis, acute orchitis, trauma, strangulated hernia, and torsion of the appendix testis.

Acute epididymitis is rare in the pre-pubertal group. There are urinary findings which often will be relieved by elevation of the testes. In torsion, elevation of the testis almost always exacerbates the pain.

Mumps orchitis is usually associated with parotitis and rarely occurs before puberty.

A strangulated hernia, particularly in cryptorchidism, is difficult to distinguish from torsion; surgery is indicated without delay.

Torsion of the appendix testis (hydatid of Morgagni) may manifest symptoms identical to a torsion of the testis and, again, surgery is indicated.

Occasionally, manual detorsion can be accomplished by the administration of a sedative and by gentle rotation, but because of the certainty of losing the testis unless the strangulation is relieved, this manipulation should not be protracted.

It is generally agreed that bilateral orchiopexies are indicated if torsion is found.

* * * * *

Management of Urinary Tract Injuries

LT R. E. Akers MC USN*. Proceedings of the Monthly Staff Conferences of the U. S. Naval Hospital, NNMC, Bethesda, Md., 1962 - 1963.

Injuries to the kidneys, urinary bladder, or urethra are not infrequently encountered in emergency room practice, and are often concomitant with injuries elsewhere in the body. Hematuria or inability to micturate, associated with a history of trauma, should immediately arouse suspicion of urinary tract damage. Most of the urinary tract is located in well-protected areas of the body and, therefore, is not injured as frequently as are the more vulnerable organs. When urinary tract trauma does occur, injuries to the spine, chest, pelvis, and intra-abdominal organs, such as the liver and the spleen, should be ruled out.

Kidney injuries are broadly classified as those which are due either to penetrating or nonpenetrating trauma. Penetrating wounds which involve the kidney are all treated surgically and are not included in this discussion. Nonpenetrating renal injuries may be divided into three groups according to severity.

Group I injuries, variously termed contusions or intracapsular injuries, involve only the renal parenchyma, and do not involve the capsule or collecting system of the kidney. This type of injury is characterized clinically by evidence of varying amounts of gross or microscopic hematuria, and usually moderate pain and tenderness in the renal area. Gross hematuria ordinarily does not persist for more than 12 to 24 hours. Excretory urograms are most often normal, but may show filling defects in the collecting system because of the presence of blood clots.

Group II or moderately severe injuries include those which extend beyond the renal capsule and/or involve the collecting system. Pain and tenderness are usually more severe and hematuria more marked, although the

* Senior Resident in Urology at the hospital, Doctor Akers has been selected for promotion to the rank of Lieutenant Commander.

last symptom is sometimes less pronounced because of ureteral obstructions, secondary to blood clots. A palpable flank mass, localized abdominal rigidity, and discoloration of the overlying skin may be encountered; shock is often present. Excretory urograms will usually reveal nonfunction of the injured kidney and presence of a retroperitoneal mass.

Patients suspected of having received renal injury should be assessed immediately. A hematocrit, complete blood count, and urinalysis should be obtained, in addition to a complete history and thorough physical examination. Patients who are unable to void should be catheterized, and a Foley catheter should be left indwelling if considerable gross hematuria is present. Shock, when present, should be treated immediately. Excretory urograms, the most important single test, should be done as soon as possible. This will not only help to assess the damaged kidney, but will give valuable information regarding the condition of the uninjured kidney. Cystoscopy should be performed and retrograde pyelograms made when necessary for diagnosis. Antibiotic therapy should be instituted, and the patient's condition evaluated frequently by means of physical examination, hematocrits, blood counts, and assessment of hematuria.

Group I injuries are treated conservatively by bed rest, antibiotics, and good hydration. Bed rest should be continued until all microscopic hematuria has cleared.

Group II injuries, if not too severe and when not complicated by other abdominal injuries, may also be managed initially by conservative treatment. Surgical intervention, however, may be necessary at any time in this group. It is indicated by occurrence of intractable shock or hemorrhage, a rapidly expanding flank mass, overwhelming sepsis, and extracapsular extravasation of urine. Many urologists advise that surgery be delayed, when possible, for 48 to 72 hours, thereby allowing a clearer delineation of the extent of the damage. This is particularly applicable when the uninjured kidney is diseased and, therefore, salvage of the injured kidney is extremely desirable.

Group III, severe injuries, are all treated surgically, usually by nephrectomy. Ureteral injuries are mostly due to surgical accidents and are not discussed in this article.

Urinary bladder injuries commonly occur as a consequence of automobile accidents, but may result from a single fall, particularly in the case of an intoxicated patient and when the bladder is full. Spontaneous rupture of the bladder may occur in inebriates with over-distention from prostatism.

Ruptures of the bladder are usually classified as intraperitoneal or extraperitoneal; however, both types can occur concurrently. Injury to the bladder should be suspected when there is a pelvic fracture or when lower abdominal trauma is associated with gross hematuria and/or the inability to void. Abdominal pain and tenderness are usually present, and shock is a common companion, particularly with intra-abdominal extravasation of urine. A cystogram will reveal extravasation of contrast agent.

All patients suspected of having a ruptured bladder or who have a pelvic fracture should be catheterized and a cystogram obtained. It is important

to obtain films of the bladder when both filled and post-drainage, as well as oblique views when possible. Many low extraperitoneal ruptures may not be diagnosed by a single X-Ray film when the bladder is filled. Treatment consists of immediate surgical repair, adequate drainage of extravasated urine, and antibiotics.

Injuries to the male urethra occur most commonly from automobile accidents, and from "straddle" type injuries. Urethral damage should be suspected when there is a history of trauma accompanied by hematuria, and/or inability to void. These injuries are classified according to locations—anterior or posterior—the divisions being the urogenital diaphragm. When urethral injury is suspected, catheterization should be attempted; if successful, the catheter should be left indwelling. The catheter will often meet obstruction at the point of rupture. If a catheter cannot be introduced, a urethrogram should be obtained.

Physical findings may include lower abdominal fullness and tenderness, an anterior rectal mass and, occasionally, a "floating" prostate when there is a complete rupture at the urogenital diaphragm. With anterior urethral injuries, there may be swelling and discoloration of the lower abdomen, penis, scrotum, and perineum secondary to extravasation of urine. Treatment of urethral ruptures consists of: diversion of urine proximal to the point of injury, drainage of extravasated urine, repair of rupture, and antibiotics.

* * * * *

Gallstones in Young Adults

An Analysis of 178 Patients Under Thirty Years of Age

LCDR Richard G. Fosburg* MC USN, Philadelphia, Pennsylvania.**
Amer J Surg 106(1): 82-88, July 1963.

The frequency of gallstones in young adults continues to be unappreciated. As late as 1959, reports have appeared emphasizing the unusual nature of cholelithiasis in the second and third decades of life. The concept of gallstones as a disease in patients over 40 years of age persists despite the fact that from 4 to 20% of reported series of cholecystectomies are in patients under 30 years of age. A review of the English literature reveals few studies of significant size which deal specifically with cholelithiasis in young adults. If improvement is to continue in the reduction of the morbidity and mortality associated with cholelithiasis, earlier diagnosis is essential.

In an attempt to elucidate certain factors which might aid in the earlier diagnosis of these patients, an analysis was made between 178 patients under 30 years of age with 404 patients over 30 years. Several reported series of

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cholecystectomies were also reviewed and the findings correlated with those of this study. Results of this analysis constitute the basis of this report.

CLINICAL DATA

TABLE I
IN 681 TOTAL ADMISSIONS FOR DISEASE OF THE
BILIARY TRACT 582 PATIENTS FULFILLED
THE CRITERIA SELECTED FOR STUDY

Under Thirty Years of Age, 178				Over Thirty Years of Age, 404			
Operative, 150		Medical, 28		Operative, 335		Medical, 69	
Men	Women	Men	Women	Men	Women	Men	Women
25	125	2	26	154	181	53	16

All patients admitted for disease of the biliary tract to the U. S. Naval Hospital, Philadelphia, Penna., during the 6-year period, January 1955 to January 1961, were reviewed. Only those patients in whom roentgenograms revealed evidence of gallbladder disease or in whom pathologic examination after operation proved the existence of cholelithiasis were selected for study. For the purpose of comparison, patients under 30 years of age

were arbitrarily classified as young adults. Of the 681 admissions reviewed, 582 fulfilled the criteria selected for study; of these, 178 (30.6%) were under 30 years.

That more patients have been encountered in the younger age groups than generally seen in the average hospital practice is a reflection of the nature of the population presenting to a large military hospital. Many of the female patients cared for are dependents of young adults in the Armed Forces and are seen during the childbearing age. The male population, despite initial screening and induction requirements, represents a greater concentration of young men than would be encountered in a civilian community. Because of the bias introduced by this preselection, the reported results from several other large hospitals have been utilized in the comparisons that follow.

Table I summarizes the breakdown of clinical material. There were 485 patients treated surgically and 97 patients treated medically. Of the 485 patients who underwent operation, 150 (30.9%) were under 30 years of age. The 28 medical patients under 30 years were encountered during the last year of the study, and the majority have subsequently undergone operation.

CLINICAL ANALYSIS

Age and Sex. There were 234 men and 348 women in the entire series, a ratio of 1:1.5. In the group under 30 years of age, there were 27 men and 151 women, a ratio of 1:5.6. In the decade 10 to 19 years, there were 3 men and 33 women; in the decade 20 to 29 years, there were 24 men and 118 women. The youngest man was 18 and the youngest girl 15 years of age. The oldest man was 81 and the oldest woman was 85 years of age.

Acute Versus Chronic Cholecystitis. Of the 582 cases, 159 (27.3%) patients presented with acute cholecystitis and 423 (72.7%) entered the hospital with the diagnosis of chronic cholecystitis or some unrelated diagnosis. Acute cholecystitis was the presenting illness in 42% of patients under 30. In the decade, 10 to 19 years, 29 of 36 patients (80%) presented with acute cholecystitis. In the decade, 20 to 29 years, 45 of 142 patients (31.7%)

presented with acute cholecystitis. In the subsequent three decades, fewer than 20% of patients presented with acute cholecystitis; however, the incidence increased markedly in the elderly. The increased incidence of severe attacks of acute cholecystitis in the younger patients stands in marked contrast to the total series. The reported incidence of acute cholecystitis in other series varies from 5 to 20%.

Pain. The most common symptom encountered was epigastric pain or pain in the right upper quadrant. Eighty-six percent of all patients experienced pain in the right upper quadrant some time during their hospitalization, although it was the presenting complaint in only 67%. Radiation of pain to the back, scapula, or shoulder top was noted in 19% of patients, but was present more frequently in the younger group, 32% versus 13%. In the younger group of patients, the pain was surprisingly different when compared to the older patients. The pain was limited to the epigastrium in 48% of the young adults.

Miscellaneous. Fatty food intolerance or a history of attacks in relation to meals was encountered in 40% of patients. In only 20% of the young adults could such a history be elicited. As the age of the patient increased, this complaint was noted more frequently and was present in 70% of patients 60 years of age or over. In many older patients this may well reflect a general dietary intolerance. The absence of this complaint, however, was responsible for the initial exclusion of biliary tract disease in many patients.

Complaints of dyspepsia, eructation, and flatulence were rare in the younger group, being noted in only 12%.

Jaundice. In the entire series, 63 patients (10.8%) had jaundice at the time of admission. This compares favorably with the incidence reported in the literature. In patients with acute cholecystitis and jaundice, there was little difference between the two age groups. Of the 42 patients with acute cholecystitis with jaundice in the entire series (26.4%) of all patients with acute cholecystitis) there were 22 patients (29.7%) in the age group under 30 years and 20 patients (23.5%) over 30. No patients under 30 years presented with chronic cholecystitis and jaundice; however, 21 patients (6.6%) of those over 30, with chronic cholecystitis, had jaundice.

Associated Disease. The attempts to associate other diseases in a causal relationship to cholelithiasis have proved uniformly unsuccessful. Many observers have noted a relatively high incidence of gallstones in diabetics. Diabetes mellitus was encountered in only one patient under 30 years of age (0.5%) as compared to 8.4% of patients over 30.

The incidence of peptic ulcer disease in those under 30 was 3.3% and 5.3% in those over 30 years of age. There is no evidence that peptic ulcer disease affects the incidence of cholelithiasis. The discovery of multiple diseases of the gastrointestinal tract is related to the diagnostic studies performed as part of the evaluation of such patients. The association of cholelithiasis, diverticulosis, and hiatus hernia was not encountered in those under 30, but was seen in 9% of those over 30 years. However, this triad was not looked for in every patient and the actual incidence might be considerably higher.

Any attempt to correlate obesity with gallstones is fraught with hazard since it is impossible to determine the weight of the patient at the time gallstones form as compared to the time when they become symptomatic. For completeness, however, 13.3% of patients under 30 were obese (10% above standard weight) as contrasted to 30.9% of those over 30 years.

Operative Data. Of the 485 patients undergoing cholecystectomy, 150 (30.9%) were under 30 years of age. Of those operated upon for acute cholecystitis, 28 (18.7%) were under 30 years and 43 (12.8%) were over 30. No deaths occurred in the younger group. The operative mortality in those over 30 was 2.7% and the mortality for the entire series was 1.8%.

The common duct was explored in 29 patients (19.3%) under 30 and in 98 (29.2%) in those over 30. Of those explored, stones were found in the common duct in 6 (20.7%) of patients under 30 and in 46 (46.9%) of those over 30. All 63 patients who had jaundice during their hospitalization had common duct exploration. Acute cholecystitis with jaundice was seen in 42 patients and 17 (40.5%) were found to have common duct stones. In the group under 30 years of age, 6 of 22 patients (27.3%) had common duct stones; in those over 30 years, 11 of 20 patients (55%) had common duct stones. The 21 patients with chronic cholecystitis and jaundice all had common duct stones; none were under 30 years of age. Fourteen patients (4.2%) in the group over 30 years old had common duct stones without clinical jaundice. The incidence of common duct stones in the total series was 10.7%.

TABLE II
FREQUENCY OF GALLSTONES IN PATIENTS UNDER THIRTY YEARS OF AGE

Author	Year	Total	Under Twenty Years of Age	Per cent	Under Thirty Years of Age	Per cent	Acute or Chronic
Blalock	1924	724	11	1.5	100	13.8	A/C
Eliason	1927	128	1	0.8	13	10.1	A/C
Bearse and Ferguson	1941	232	...	...	48	20.6	A/C
Biskind and Pevaroff	1942	746	...	...	110*	14.7	A/C
Smith	1945	332	2	0.6	21	6.3	A
Adams and Stranahan	1947	1104	6	0.5	76*	6.9	A/C
Dunphy and Ross	1949	134	...	...	11	8.2	A
Gaster	1950	533	...	...	24	4.5	A/C
Griffin and Smith	1954	245	8	3.3	35*	14.4	A/C
Colcock and McManus	1955	1356	3	0.2	74*	5.4	A/C
Becker, Powell and Turner	1957	1060	19	1.8	142*	13.4	A
Sparkman	1957	100	...	...	23*	23.0	A/C
Johnson and Close	1957	103	1	0.9	17	16.5	A
McEachern and Sullivan	1959	155	3	1.9	17	10.9	A
Byrne	1959	134	...	...	6	4.5	A
Smith	1959	148	3	2.0	21	14.2	A/C
Pearce	1960	172	...	...	9	5.2	A
Pearce	1960	395	...	...	28	7.1	C
Sethi	1961	274	...	...	38	5.8	A
Weckesser	1961	3085	28	0.9	276	8.9	A/C
Fosburg	1962	485	32	6.6	150	30.9	A/C
Total.....	...	11645	117	1.0	1239	10.6	A/C

* Includes patients thirty years of age.

A total of thirty-one different post-operative complications were seen in the entire group for a morbidity rate of 18.2%. Complications were encountered in 12 of 150 patients under 30 years of age for a morbidity rate of 8% as contrasted to 76 of 335 patients over 30 (22.6%). Of these complications, wound infection was the most common followed by atelectasis and pneumonia. Retained common duct stones occurred in 3 patients, all over 30 years of age, an incidence of 0.6% in the total series.

These results are similar to those of others and warrant no special comment except to emphasize that a gratifyingly low morbidity and no mortality is possible in young adults under the age of 30 years.

Comments. The frequency of gallstones in patients under 30 years of age has been summarized in Table II from several collected series of cholecystectomies in which the age was specifically stated. Table III summarizes the differences elucidated in this analysis. It has been a well documented fact that the incidence of gallstones increases with age. The majority of studies dealing with biliary tract disease have found the greatest incidence in the fifth or sixth decade. This finding has been substantiated by both clinical and autopsy analyses.

NOTE: Interested persons are urged to read the original article which contains forty-two references and an excellent comparative review of the related literature by Doctor Fosburg. —The Editor

* * * * *

Therapy of Schizophrenia - A Major Joint Study Report

New evidence of marked efficacy of drugs in treatment of schizophrenia was released by the Public Health Service and collaborating scientists on 6 March 1964. A comprehensive study, supported and directed by the National Institute of Mental Health in Bethesda, Md., shows that 95% of schizophrenics treated by drugs improved within 6 weeks; 75% showed marked to moderate improvement, according to results of the two and a half year study reported in a recent issue of Archives of General Psychiatry.

This is the first large-scale study in which acutely ill patients were treated in varying types of psychiatric hospitals. They ranged from small

TABLE III
DIFFERENCES ELUCIDATED IN THIS ANALYSIS

Disease	Under Thirty Years of Age (Per cent)	Over Thirty Years of Age (Per cent)
Acute cholecystitis.....	42.0	21.0
Operated on for acute cholecystitis.....	18.7	12.8
Chronic cholecystitis.....	58.0	79.0
Pain limited to epigastrium...	48.0	10.0
Radiation of pain.....	32.0	13.0
Radiation of pain to back....	51.0	27.0
Radiation to shoulder top....	16.0	16.0
Nocturnal attacks.....	37.0	17.0
Fatty food intolerance.....	20.0	60.0
Dyspesia, eructation and flatulence.....	12.0	60.0
Acute cholecystitis with jaundice due to common duct stone.....	27.3	55.0
Stones in common duct.....	20.7	46.9
Common duct explored.....	19.3	29.2
Retained common duct stones.	0.0	0.6
Operative mortality.....	0.0	2.7
Postoperative morbidity rate..	8.0	22.6

private hospitals to large State institutions. The Institute's Psychopharmacology Service Center enlisted nine hospitals to make up the Collaborative Study Group. Earlier studies have been limited to hospitals of a single type. These results, coupled with findings from other research by the Institute suggest that these drugs will be highly effective tools for treating schizophrenics in comprehensive community mental health centers where the emphasis is on rapid and early treatment near the patient's home. The hope is that many of these patients can thus avoid tragic years in institutions. The investigators explain that their findings make it "more feasible to treat acute psychoses in a variety of clinical settings rather than (solely) in public mental hospitals."

Patients in the study were young schizophrenics averaging 28 years of age, usually suffering either their first psychotic breakdown or first hospitalization, and whom participating clinicians judged to be "markedly ill." More than 400 patients either were given chlorpromazine, two of the newer phenothiazines (fluphenazine or thioridazine) or served as controls and received no drugs. The phenothiazine family of drugs was chosen because it contains the tranquilizers with the greatest potency. Chlorpromazine is the oldest and most reliable drug of this type.

Other results of the study were:

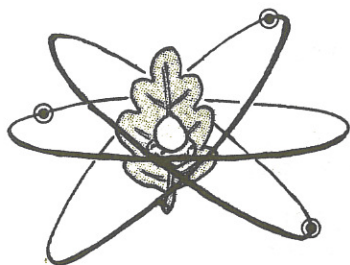
1. Nearly one-half of the improved patients were rated as having no symptoms or only borderline illness at the end of 6 weeks.
2. The degree of improvement had not leveled off by the end of the study, indicating that improvement probably was continuing and would have been observed if the project had been longer.
3. Twenty-three percent of patients in the control group showed marked or moderate improvement when no specific drug treatment was used. This represents the proportion of patients expected to improve with other standard forms of hospital treatment.
4. All of the three phenothiazines were equally successful and showed a strong over-all effect against nearly all schizophrenic symptoms. The variety of symptoms affected by the drugs suggests that they have a basic antipsychotic action. They not only helped the hostile over-active patient, but also greatly benefited the apathetic, withdrawn patient.
5. The drugs alleviated the classic schizophrenic symptoms of hallucinations, thinking or speech disorders, bizarre motor behavior, inappropriate emotion, and helped to improve personal relations. They were less effective against feelings of guilt, delusions of grandeur, and loss of memory.
6. Side effects generally were mild despite the higher dosages required for patients of this sort. The more common side reactions were limited to drowsiness, dizziness, and dry mouth.

This study has important implications for treatment of mental illness, one of the nation's major health problems. About half the patients in United

States hospitals are psychiatric cases; half of these are schizophrenic. The authors conclude, "The findings of this study lend strong support to the rising optimism about . . . the treatment of acute schizophrenic psychoses. The effects of phenothiazine therapy are not only quantitative . . . they are also qualitative in that a wide range of schizophrenic symptoms and behavior are favorably altered."

The hospitals participating in the study were: Boston State Hospital, Boston Mass.; D. C. General Hospital, Washington, D. C.; Kentucky State Hospital, Danville, Ky.; Malcolm Bliss Mental Health Center, St. Louis, Mo.; Mercy-Douglass Hospital, Philadelphia, Penna.; Payne-Whitney Clinic, New York City, N. Y.; Rochester State Hospital, Rochester, N. Y.; Springfield State Hospital, Sykesville, Md.; Institute of Living, Hartford, Conn. The data were analyzed by the Biometric Laboratory, George Washington University, Washington, D. C., and by the Psychopharmacology Service Center of the National Institute of Mental Health.

* * * * *



RADIATION MEDICINE

Attention - All AEC-Licensed Naval Hospitals!

Atomic Energy Commission Licensing Policies.--A review of Applications for Byproduct Material License, Form AEC 313(5/58), which have been submitted via this Bureau in the past, reveals several repetitive discrepancies. Failure to follow procedures set forth in AEC publication: "A Guide for the Preparation of Applications for the Medical Use of Radioisotopes," has resulted in unnecessary delay and correspondence between the applicant, this Bureau, and the Commission. Of especial importance is the matter regarding each application as an original. It is the policy of the AEC to require full and complete restatement of all conditions on each application, rather than accepting referrals to previous licenses and applications.

While this Bureau attempts to catch any errors and/or omissions on applications, returning them to the applicant rather than forwarding them to the AEC, the resultant delays only serve to further complicate the situation.

Further attention of Commanding Officers is invited to the fact that the license authorizes inspection of the facility by the AEC. To emphasize the importance of such inspections, and the meticulous and thorough scrutiny made of the installation, the following is extracted from an AEC letter to the Commanding Officer of a naval hospital:

"This refers to the inspection conducted on _____ 196_, of your activities authorized under AEC Byproduct Material License No. _____

"It appears that certain of your activities were not conducted in full compliance with license conditions and the requirements of the AEC's "Standards for Protection Against Radiation," Part 20, Title 10, Code of Federal Regulations, in that:

"1. Contrary to 10 CFR 20.201(b), "Surveys," surveys were inadequate to determine:

- a. the quantities and concentrations of radioactive materials disposed of by release into the sanitary sewerage system;
- b. the radiation hazards incident to a spill of strontium 90-yttrium 90 in the "Hot" laboratory which reportedly occurred during 196_; and
- c. the quantity and airborne concentrations of strontium 90-yttrium 90 released from the exhaust hood into unrestricted areas as a result of the spill of strontium 90-yttrium 90 during 196_.

"2. Contrary to 10 CFR 20.401(b), "Records of surveys, radiation monitoring and disposal":

- a. records were not maintained showing the materials disposed of via the sanitary sewerage system; and
- b. records were not maintained of surveys made pursuant to 10 CFR 20.201(b) in connection with the possession and use of strontium 90-yttrium 90.

"3. Contrary to License Condition No. 43, which incorporates your license application dated _____:

- a. the radiological safety officer did not assess the extent of the strontium 90-yttrium 90 contamination following the spill which reportedly occurred during 196_, and did not supervise the decontamination of the affected areas as specified in Section VII of your "Operating Procedure and General Instructions for the Radioisotope Laboratory"; and
- b. the radiological safety officer did not inform the Radioisotope Committee of the spill of strontium 90-yttrium 90 referred to above as specified in paragraphs 3(f) and 3(g) of NAVHOSP INST. 6470.2.

"4. Several sealed sources containing byproduct material had not been leak tested at intervals of six months or less as required by License Condition No. 28(C). Also, records of those tests conducted were not maintained in units of microcuries as required by License Condition No. 28(D).

"This notice is sent to you pursuant to the provisions of Section 2.201 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal

Regulations, a copy of which is enclosed. Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including (1) corrective steps which have been taken by you, and the results achieved; (2) corrective steps which will be taken; and (3) the date when full compliance will be achieved.

"We understand that your method of evaluating film badges, developed at _____ Naval Hospital, involves a comparison of exposed film with film standards furnished by the National Naval Medical Center at Bethesda, Maryland. Your radiological safety officer reportedly did not know whether the film badges and film standards were of the same emulsion and whether the same development procedures were employed in developing the film badges and film standards. We believe that your film badge monitoring program should be reevaluated to establish that there are no unnecessary errors being introduced in the evaluation of radiation doses received by individuals. We would appreciate clarifying information concerning the adequacy of your film badge monitoring program with your reply to this letter."

The foregoing letter and the inspection resulted in a complete reappraisal of this particular hospital's entire radiological safety program. The hospital's detailed, two-and-one-half page reply states, in part, "... An extensive radiation safety program has been instituted and carried out since inspection of _____ 1963," and goes on, step-by-step, explaining what is now being done. A new radiation safety officer has been appointed and the Radioisotope Committee alerted to the requirements of the Code of Federal Regulations.

The Bureau of Medicine and Surgery has underwritten the training of a number of Medical Corps and Medical Service Corps officers who are capable of directing radiation safety programs. If one of these officers is not assigned to the staff of the hospital, a request for assistance in designing such a program will result in immediate and favorable action, if addressed to Chief, Bureau of Medicine and Surgery, Attn: Code 742.

MISCELLANY

Notice of Drug Withdrawal

From: F-D-C Reports, Washington, D.C., 26(9): 10, 2 March 1964.

Text of FDA Statement on Parnate Issued 25 February 1964:

The Food and Drug Administration has announced that it has concluded that the new drug tranylcypromine (Parnate) is not safe for continued distribution under present labeling. FDA said that a significant number of adverse reactions have been reported in patients who were taking the drug alone or in combination with other drugs.

References to increased blood pressure have been found in some 400 reports on use of the drug from worldwide sources. Reactions range from

high blood pressure and severe headaches to strokes and death. About 50 cases resulted in cerebral vascular accidents and, in about 15 cases, death followed. Six of the reported fatalities were in the United States. The manufacturer, Smith, Kline & French Laboratories of Philadelphia, estimates that three and one-half million patients have received the drug.

FDA said it has discussed these findings with the company and has suggested to them that the drug be removed from the market. The Company has advised FDA that it does not agree with the Government's conclusions and may wish to avail itself of the opportunity for a hearing as provided by law. Meanwhile, however, the firm states that it is taking the product off the market. FDA said that a notice will be published in the Federal Register giving the firm 30 days in which to decide whether it wishes a hearing on proposed withdrawal of approval of the new drug application.

Parnate was first marketed in the United States in March 1961. It is a potent prescription drug for the treatment of mental depression. The first report of a stroke associated with the drug appeared in the British medical journal, *The Lancet*, in June 1963. Others followed.

Parnate functions through its effect upon the monoamine oxidase enzyme system, one of the enzyme systems which helps to regulate body processes. A side effect in many persons being treated with the drug for depression is a lowered blood pressure. Paradoxically, however, clinical experience shows in some cases a rise in blood pressure associated with the administration of the drug. Increases in blood pressure may occur, particularly when Parnate is administered with certain other drugs, including amphetamines, reserpine, and certain diuretics.

Smith, Kline & French, in cooperation with FDA, revised the labeling of Parnate in October 1963 and issued a drug warning letter to all physicians pointing out the new and revised contraindications and warnings. The letter warned doctors to discontinue use of the drug when any high blood pressure symptoms were observed, not to use it when the patient has a confirmed or suspected cerebral vascular defect or disease, and not to use it with other monoamine oxidase inhibitors.

* * * * *

Important Drug Warnings

Recent reports of adverse reactions associated with the use of Eutonyl (pargyline hydrochloride) require that the medical profession be apprised of this information. Abbott Laboratories has submitted this information to the Food and Drug Administration and has recommended changes in the literature for this product. The following report has been prepared by Abbott Laboratories in cooperation with the Food and Drug Administration, and Abbott particularly wishes to bring to physicians' attention the revised sections in their brochure entitled, Contraindications, Warnings and Precautions.

"Your particular attention is directed toward the danger of inducing a hypertensive reaction in patients receiving Eutonyl who take a

sympathomimetic drug (amphetamines, ephedrine) or who ingest cheese, fermented beer or wine (which contain pressor amine substances). Patients should be warned against self-medication, except as you (physicians) approve, with any proprietary (over-the-counter) drugs, particularly "cold tablets," "sinus decongestants," or "reducing" pills because they often contain amphetamines or other vasoconstrictor amines. In the event of a hypertensive reaction, phentolamine*, or a phenothiazine, usually parenterally, may be employed to reduce blood pressure.

We are also reemphasizing the dangers of hypotension which may be associated with the use of excessive doses of Eutonyl. It is extremely important to avoid severe or prolonged hypotension in patients with vascular disease because of the potential risk of thrombosis. As previously stated in our literature, caution is necessary with the use of certain drugs in patients receiving Eutonyl because an exaggerated hypotensive effect may result. Such drugs include antihistamines, sedatives and hypnotics, narcotics (notably meperidine) and of special importance, alcoholic beverages. Suggestions have been added for instruction of patients to prevent postural hypotensive episodes.

Your attention is also directed to the fact that contraindications have been added to the literature against the concomitant use of Eutonyl with other monoamine oxidase inhibitors and with methyldopa.

As with extended use of all drugs, a few additional side effects have been noted. These have included urinary retention and urgency, and rarely, hypoglycemia and skin rash.

Please report any adverse effects or other unusual experience observed with the use of Eutonyl to Abbott Laboratories or to the Food and Drug Administration. "

* Regitine (Ciba)

FROM THE NOTE BOOK

Meeting of the American College of Physicians

Medical officers planning to attend the annual meeting of the American College of Physicians at Atlantic City, N.J., 6 - 10 April 1964, are advised that the Armed Forces tri-service social hour will be held under Air Force auspices on the evening of Tuesday, 7 April, at the Kents Midtown Restaurant. Further details will be available at the meeting. All military officers who attend the annual session, their wives and guests are invited to attend.

The annual dinner meeting of Navy Chiefs of Medicine will be held on the evening of Wednesday, 8 April, at the Club in Pomona, N.J., (formerly the Naval Air Station, Atlantic City). Transportation will be available for those who do not have any.

Medicine Branch, Professional Division, BuMed

WANTED: ARTICLES FOR TRAINING BULLETIN

The *Naval Training Bulletin* describes methods and techniques of training throughout the Navy, explains plans and programs of the Navy Department, describes training of other U.S. Government agencies and foreign agencies of interest to naval personnel, and discusses training developments that have application to naval personnel. To reflect the training in the fleet and at field activities, the *Bulletin* needs articles from readers. Those who have participated in the operation of a successful training program are in an excellent position to pass along their ideas and share their experiences. Articles from fleet personnel help make the *Bulletin* what it is intended to be; a magazine which shows what is actually taking place in the fleet, rather than one which merely emphasizes pedagogical methodology.

The following types of articles are particularly desired:

- Those describing a training program that has solved some unusual problem.
- Those which describe a new approach or reflect new ideas with respect to some persistent or recurring problem.
- Those whose success is reflected in the fact that the ship or activity has received some form of commendation.
- Those simply describing a program which has worked well or has shown practical results.

What is needed is practical material, not polished prose. The staff of the *Bulletin* will provide any editorial treatment necessary to make articles conform to accepted style and grammar.

The following is a checklist for articles submitted:

- Does the article deal with something with which the author has had first-hand experience?
- Does the article deal primarily with facts and ideas which impart information, rather than those which merely publicize?
- Has the article been read and criticized by others? Have appropriate changes been made?
- Do the main ideas stand out?
- Have photographs been made to accompany the article? Are the photographs clear?
- Is the title short and accurate?
- Can the main idea of the article be expressed in one sentence?

This checklist is intended as a guide, not a criterion against which articles are judged; for example, photographs are desired for articles, but they are not essential. Articles may be of any length, but articles containing between 750 and 3,000 words are preferred.

If the author wishes his photograph to appear with his by-line, he should send a photograph of himself (any size is satisfactory) with the article.

From: Naval Training Bulletin, BuPers, NAVPERS 14900 - Winter 1963-1964

MSC Training Announcement. The attention of all Medical Service Corps officers is invited to provisions of BUMED INSTRUCTION 1520.12B which outlines the MSC full-time training program. The next Sanitary Science course convenes at the University of California, Berkeley, Calif., in January 1965. To be considered for this class, requests must reach BuMed prior to 1 July 1964. —MSC Division, BuMed

Notice to ACDU and Naval Reserve A. P. A. Psychiatrists

Navy Luncheon to be Held on 6 May 1964 at Meeting of the American Psychiatric Association. Psychiatrists, active duty and Naval Reserve planning to attend the annual meeting of the American Psychiatric Association at the Biltmore Hotel, Los Angeles, Calif., 4 - 8 May 1964, are advised that the annual Navy Luncheon will be held on Wednesday, 6 May, at 12:00 noon in Conference Room Two, Biltmore Hotel. Arrangements are being made through the Neuropsychiatry Branch, Professional Division, Bureau of Medicine and Surgery. Inquiries may be directed to that office, attention Code 313. All U. S. Navy and Naval Reserve or former Naval Reserve psychiatrists and neurologists attending the annual meeting are invited to attend. It would be appreciated and would also assist in planning if those who expect to attend will notify this office in advance of the meeting.

* * * * *

BUPERS REPORT 1080-14

(Excerpt from ComServPac Information Bulletin, March 1964)

What Is It? Enlisted Distribution and Verification Report is a machine processed listing of enlisted personnel attached to a given activity. It reflects the actual onboard count as compared with the Bureau established allowance, and the TYCOM established Enlisted Distribution Plan "EDP."

Who Receives It? Each ship/unit/activity in commission. It is distributed by cognizant PAMIs to each command approximately by the 15th of each month.

What Does It Contain? Information upon which Distribution Commanders effect assignments of individuals. It identifies each individual by name, service number, rate and naval enlisted classification code. Additional information on the individual's sex, marital status, citizenship, and information concerning the man's duty and VEY status is also provided.

Who Should See It and Why? The staff personnel officer should make the initial review and verification of the BUPERS 1080-14, ensuring that all information is correct for each individual. The Commanding Officer, Executive Officer, and Department Heads should examine this report which will reveal the rate and rating totals, and the total onboard count for the following factors: Enlisted Distribution Plan, Allowance, current onboard count, and prospective onboard totals for 1, 2, 3, 4, 5, 6, 7, 8, 9, and 12 months in the future. —Hospital Corps Division, BuMed

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DENTAL**SECTION**

The Function and Importance
of Incisal Guidance in Oral Rehabilitation

Clyde H. Schuyler DDS, Montclair, N. J. J Pros Den 13(6): 1011-1029,
November-December 1963.*

An unfavorable incisal guidance may tend to produce abnormal functional movements of the condyles. It may contribute to abnormal stresses and movements which are potentially pathologic. A change or modification of an unfavorable incisal guidance will have a favorable influence upon the pattern of movement of the condyles.

There is a degree of resilience and flexibility in the functional movements of the condyles, as evidenced by their vertical translation, but there is no flexibility or resiliency in the incisal guide factors. The incisal guidance is controlled by hard tooth surfaces contacting opposing hard tooth surfaces.

Anterior teeth which have been in functional contact cannot be taken out of contact without creating potentially unfavorable factors. A reasonable degree of function is favorable to the retention of teeth, and when the anterior teeth are in functional contact at the completion of an oral rehabilitation, their relationship remains constant.

There are many factors which influence the centric maxillomandibular relation. Closure on the horizontal hinge axis varies with muscle tone and neuropathic influences, with a forward, backward, or a lateral position of the head, and position of the body.

The desirability of a slight freedom of lateral and anterior posterior movement in centric occlusion rather than a locked intercuspation in the most retruded maxillomandibular relation has been recognized. This freedom of movement in centric occlusion promotes patient comfort and reduces the tendency to bruxism and other traumatogenic influences on the supporting structures.

The author discusses the objectives of an occlusal rehabilitation and the importance of recognition of the coordination of the occlusion as one of the most important and most complicated facets of the practice of dentistry. The article was written for operative dentistry, however, the principles involved are equally important to oral rehabilitation with removable prosthesis and should be carefully evaluated by all Prosthodontists. *(Submitted by CAPT M. L. Parker DC USN, NDC, Pearl Harbor, Hawaii)

* * * * *

Incidence and Distribution of Dental Caries
in the United States

James M. Dunning, The Dental Clinics of North America, Pgs 291-303, July 1962*.

The article clearly describes the multifactorial nature of dental caries. Among the host factors are race, age, and sex. Racial heredity and environmental factors are difficult to separate but race does play a part with the Chinese and Negroes having least dental caries. In the case of age the greatest intensity of the caries process lies in the decade from 15 to 25 years of age. Below the age of 30, the difference in the dental caries experience of male and female is minor.

Environmental factors appear more powerful than the personal or host factors. There is a marked variation in the United States, with less dental caries being found in the South and in regions away from the seacoast. Climatic and geologic factors can be interpreted as reasons for these geographical variations. The areas associated with higher mean annual hours of sunshine, high temperature and low relative humidity are associated with low caries. In areas where deep-well water is commonly used, natural fluoride in the water has been most prominent in producing areas of low caries prevalence. Another factor to consider, which is often overlooked, is the total water hardness. The shift of population from rural to urban does not appear as a strong factor.

Besides aiding in estimating needs for dental care in various parts of the country these geographical distribution studies in dental disease give certain clues to the etiology of dental caries. *(Submitted by CAPT F. L. Losee DC USN, Ad. Com. Great Lakes.)

* * * * *

Improved Dental Cements

Technical News, U. S. Department of Commerce, National Bureau of Standards, Washington, D. C.

Promising findings were obtained in recent National Bureau of Standards experiments with a dental cement (zinc-eugenol) containing the additives o-ethoxybenzoic acid (EBA), and fused quartz. It was demonstrated that this formulation had better strength and quicker setting times than had the cements now widely employed, and that it acted as an effective sedative in dental restorations. These results indicate that the new cement has many dental applications, such as; pulp-capping material, sedative intermediate base, and as a temporary filling material.

* * * * *

Fluoride May Be Useful
in Combating Bone Diseases*

In an abstract of an editorial originally printed in the New England Journal of Medicine, it was pointed out that current interest in fluoride for prevention of caries in children is expanding to include its possible use in various bone diseases.

Studies on effects of high doses of sodium fluoride in treating forms of osteoporosis and Paget's Disease have been favorably reported, according to the editorial. The editorial stated: "In all patients so studied, there have been no toxic effects. Fluoride seems to be an important bone nutrient; however until exact dose response is determined, fluoride treatment must be used with caution.

Early indications of a possible role for the use of fluoride in bone diseases are favorable. Certainly, the low dose (1 mg per day) currently employed in preventing caries in children can be extended to include adults in the hope of preventing future osteoporosis." —Dental Abstracts 9(1): 28, January 1964.

AMA Position on Fluoridation*

JAMA 186: 64, October 5, 1963. From Dental Abstracts 9(2): 91-92, February 1964.

The official position of the American Medical Association on fluoridation does not agree with views expressed by W. C. Black in an editorial, "Dental Caries and the Pediatrician," in the August 1963 issue of the American Journal of the Diseases of Children. The AMA does not agree with Dr. Black's statement that fluoridation is "unnecessary and unwise," nor with the four reasons presented as evidence.

Although Dr. Black states that reliance on fluoridated water dosage is "highly variable and inaccurate," the contrary has been demonstrated by years of fluoridation in well-controlled studies. Dr. Black presumably would withhold fluoride after the tenth year. Yet, results of recent studies have shown that protection is afforded well beyond the age of ten. The implication of harm from ingestion of 1 ppm of fluoride after the tenth year is unfounded.

There is no evidence to support Dr. Black's assertion that fluoridated water is of no benefit to plants and may be undesirable for edible plants.

The American Medical Association's position on the fluoridation of public water supplies remains the same as that adopted in 1957 by the House of Delegates. Fluoridation should be regarded as a prophylactic measure for reducing tooth decay at the community level and is applicable where the water supply contains less than the equivalent of 1 ppm of fluorine.

* The preceding articles were copyrighted by the American Dental Association. Reprinted by permission.

Personnel and Professional NotesDental Officers Selected for Training FY 1965

The Dental Training Committee convened in the Dental Division, Bureau of Medicine and Surgery, on 27 February 1964, and selected the following dental officers for training during Fiscal Year 1965.

GENERAL POSTGRADUATE COURSE (28)

CDR Carl J. Swanson	LCDR Donald E. Meister
LCDR Charles K. Phillips, Jr.	LCDR Herbert O. Scharpf
LCDR Ralph P. Huestis	LCDR Carlton J. McLeod
LCDR Everan C. Woodland, Jr.	LCDR Kenneth E. Brown
LCDR John H. Hegley	LCDR John E. Williams, Jr.
LCDR Charles G. Evans	LCDR Stanley E. Pepek
LCDR Thomas L. Whatley	LCDR Albert G. Iandolo
LCDR Robert A. Vessey	LCDR Frederick P. Eichel
LCDR James F. Scott	LCDR James T. Christian
LCDR John (n) Koutrakos	LCDR Malcolm S. Davis
LCDR Howard S. Tugwell	LCDR Harry E. Semler, Jr.
LCDR Ollie V. Hall, Jr.	LCDR Richard C. Edwards
LCDR Milton R. Wirthlin, Jr.	LCDR George A. Stanton, Jr.
LCDR Barry E. Pines	LCDR Edward A. Miller

APPROVED AS ALTERNATES (3)

LCDR Noel D. Wilkie	LCDR James E. Miller
LCDR Robert E. Moore	

ORAL SURGERY TRAINING (9)

LCDR John D. Cagle	First Year Residency
LCDR William R. Martin	First Year Residency
LCDR Thomas F. McCann	First Year Residency
LCDR Thomas W. McKean	First Year Residency
LCDR James M. Wilson	First Year Residency
CDR James H. Scribner	Second Year Residency
LCDR William R. Hiatt	Second Year Residency
LCDR John S. Lindsay	Second Year Residency
LCDR Bill C. Terry	Second Year Residency

PROSTHODONTIC TRAINING (6)

LCDR Ray K. Atkinson	First Year Residency
LCDR Philip R. Falcone	First Year Residency
LCDR Edward P. Klecinic	First Year Residency
LCDR Wallace D. Loo	First Year Residency
LCDR Philip W. Strauss	First Year Residency
LCDR Arthur L. Davy	First Year Residency

PERIODONTIC TRAINING (6)

CDR George K. Woodworth	First Year Residency
LCDR Ernest T. Witte	First Year Residency
CDR Ernest E. Davies	Civilian Institution
	Long Course-1 year
LCDR Walter J. Gorman	Civilian Institution
	Long Course-1 year
LCDR Alexander D. Sanderson	Civilian Institution
	Long Course-1 year
LCDR George W. Rice, Jr.	Civilian Institution
	Long Course-1 year

OPERATIVE DENTISTRY (2)

LCDR Thomas A. Garman	Civilian Institution
	Long Course-1 year
CDR Julian J. Thomas	Civilian Institution
	Long Course-1 year

ORAL MEDICINE (2)

LCDR William K. Bottomley	First Year Residency
LCDR Robert A. Gaston	First Year Residency

ENDODONTIC TRAINING (2)

CDR Paul E. Zeigler	First Year Residency
LCDR Russell A. Grandich	First Year Residency

Applications were submitted by several officers for training in Oral Pathology, Public Health Dentistry, and Histopathology. The needs of the Dental Corps balanced with the limitation of funds determined the priority of subjects and the total number of trainees for the fiscal year 1965 program. In light of this, selections for advanced training were limited to the subjects listed. Each year all specialties are reviewed, and the needs of the Dental Corps determined. The action taken by this year's Board has no bearing on future Boards, so those who desire are encouraged to re-apply for consideration in future years programs.

Ticonium Training at Dental Clinic, Washington D. C. CAPT H. H. Fridley, Executive Officer of the Naval Dental Clinic, Washington, D. C., has arranged a training program in TICON laboratory techniques for personnel of the command. Mr. C. F. Mosher, Training Director, Ticonium Division, CMP Industries, Albany, New York, will conduct the course during the month of May 1964. The program will include a demonstration of techniques employed in fixed partial dentures utilizing the Ticomatic casting machine.

* * * * *



PREVENTIVE MEDICINE

Report of Measles Epidemic in the Bonin Islands June and July, 1963

Report received by Force MO, ComNavForces Marianas from Dr. D. A. Passick, December 1963.

The epidemic was initiated by a 16-year old girl who returned from Guam where she was attending school and had been exposed to measles while there. Within 14 days, following the appearance of her rash, there were other typical cases of measles. An epidemic of about 2-months duration followed. The total population at that time was 203. There were 117 cases of measles or 57 per cent.

Human gamma globulin, in modifying doses of 0.02cc per pound of body weight, was administered to 26 individuals including young children and one pregnant woman. Of these, 4 had no signs or symptoms of measles, 17 had mild signs and symptoms, and 5 had typical signs and symptoms. There is no accurate information regarding length of exposure at the time of the injections.

There were no deaths due to measles. There were no severe complications, the only complication being that of a 16-year old girl who exhibited bizarre behavior for 2 weeks after having measles. The girl did not have any of the signs of meningitis or encephalitis such as fever, headaches, vomiting, seizures, or meningeal irritation. Currently, she has no residual problems related to the central nervous system.

Distribution of Cases According to Age Groups

<u>Age Group</u>	<u>Number Of Cases</u>	<u>Total Pop. In Age Group</u>	<u>Per Cent Of Group</u>	<u>Per Cent Of Cases</u>
0-4	20	22	90.9	17.1
5-9	25	29	86.2	21.4
10-14	35	36	97.2	17.1
15-19	25	26	96.2	21.4
20-24	6	10	60.0	5.1
25-29	2	6	33.3	1.7
30-34	1	10	10.0	0.8

Age Group	Number Of Cases	Total Pop. In Age Group	Per Cent Of Group	Per Cent Of Cases
35-39	1	18	5.5	0.8
40-44	1	11	9.1	0.8
45-49	0	8	0.0	0.0
50-54	0	3	0.0	0.0
55-59	1	6	16.6	0.8
60-64	0	4	0.0	0.0
65-69	0	2	0.0	0.0
70-74	0	5	0.0	0.0
75-79	0	3	0.0	0.0
80-84	0	3	0.0	0.0
85-89	0	1	0.0	0.0

There has not been a measles epidemic or even a small outbreak for many years (at least 18 years and possibly longer than that) which accounts for the very high incidence.

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Mianeh Fever

Spectrum, Pfizer Lab., Pg. 87, November-December 1963.

Mianeh fever, a clinically distinct type of relapsing fever referred to as the Persian form, is an acute infectious disease endemic to the Middle East. It is caused by the spirochete Borrelia persica; and the hematophagous tick Ornithodoros tholozani serves both as reservoir and vector. Camels and various rodents commonly harbor the tick. The incubation period averages about a week. The initial attack starts abruptly with chills, followed by high fever, intense headache, joint and muscle pain, nausea and vomiting, photophobia and cough. A characteristic erythematous rash is common during this period. Typical rose-colored spots may develop later. Conjunctivitis and iritis are frequently seen. Usually, there are four or five febrile episodes following a cyclic pattern of crisis, remission and relapse.

* * * * *

Control of Gonococcal Infections

With the introduction of penicillin and other antibiotics, it was hoped that gonorrhea would cease to be a public health problem. A World Health Organization survey has revealed a significant recrudescence of gonococcal infection in many countries. No fewer than 53 of 111 countries and areas in the world have shown a persistent increase in incidence since 1957.

In view of the overall failure to control gonorrhea, WHO convened an Expert Committee on Gonococcal Infections in 1962, which reviewed in detail the many factors relating to the extent, nature, and significance of the problem and the reasons why control attempts have been unsuccessful.

In its report the Committee notes that it is difficult to obtain accurate figures on the true extent of gonorrhea throughout the world. Pin-point studies have shown the actual number of cases occurring in a given area to be as many as 100 times the number reported, and it is estimated that the annual number of new cases now exceeds 60-65 million. A large undiagnosed reservoir of infection is becoming prevalent in the very young age groups. Complications continue to exist. Ophthalmia neonatorum and vulvovaginitis of children, as well as serious pelvic inflammation (salpingitis) and sterility in females, continue to occur more extensively than is commonly believed to be the case.

There is no evidence that the wide use of "ideal" antibiotics over the last twenty years, particularly penicillin and streptomycin, has in any way reduced the reservoir of gonococcal infection. The infectiousness of gonorrhea, its short incubation, the mode of transmission, and other factors have not made it possible to evolve epidemiological methods effective against its very rapid spread. It has nowhere been possible to bring a sufficiently large number of cases and contacts to treatment quickly enough to overtake the rapid spread of the infection in the community. Air travel, furthermore, allows extremely rapid transfer of infection between countries and continents. There also exists itinerant groups at particular risk of infection (migrants, seafarers, etc.). Case-finding and contact treatment, rapid epidemiological procedures and culture-testing techniques, preventive treatment, individual and mass treatment of special groups or obligatory hospital isolation of infected persons, legal notification of contacts, etc, have been of limited value: the methods available have been incapable of reversing the epidemiological balance so adverse to the human host in all regions. The failure to interrupt transmission and to control gonococcal infection is world-wide and should be recognized by health administrations, the medical profession, and the public.

Present knowledge of gonorrhea and the techniques available for the detection of the gonococcus in the individual, particularly in the female, are limited; moreover, these techniques are not widely used. The failure to control gonococcal infection by treatment in the mass of patients should encourage health administrations to place better central laboratory services at the disposal of local institutions and doctors in medical and public health practice, since etiological agents other than Neisseria gonorrhoeae—such as Bacteriaceae, Trichomonas, and viruses—may give rise to similar symptoms to a varying degree in different geographical areas. Facilities for specific diagnosis would further efforts to control the disease and contribute to a more accurate picture of the extent of gonococcal infection. Notwithstanding the limitations of Gram-staining (and even more so of methylene blue), these methods are useful as a first step for the primary laboratory identification of the gonococcus. The sending of smears (for example, by mail) from outlying areas to a central public health laboratory, for primary diagnosis, is not widely practiced. As the

laboratory services develop, inoculation of transport and culture media as well as the use of standard techniques, and possibly the introduction of fluorescent methods, should permit more definitive detection of the gonococcus in clinically symptomatic and asymptomatic individuals as well as in epidemiological investigations and surveys. In laboratories able to employ immunofluorescent techniques, N. gonorrhoeae can be detected somewhat more rapidly, but not more frequently than with the best culture methods.

There is microbiological evidence in several parts of the world of changing sensitivity of circulating strains of N. gonorrhoeae to previously effective drugs. In some areas strains "resistant" to penicillin and streptomycin have developed and clinical failure rates are higher for dosages and preparations effective several years ago. The allergenicity, toxicity, or cost of the drugs in use at present also limit their usefulness.

The methods of health education now used have failed to prevent gonorrhea from spreading among the younger, more exposed, and more sexually active members of the community, and have not counteracted the development of indifference to the seriousness of this health problem among the public in general, an indifference which has partly resulted from the ease of treatment with effective modern drugs. Moreover, there is already an overall shortage of trained personnel to meet the complex epidemiological situation both in developed and in developing countries.

Investigations are therefore urgently needed into new techniques and methods to improve the scope of the tools already available to applied research, whereby new discoveries can be assessed in different geographical, human, and microbiological environments, so that they can be used at the point of maximum advantage at the earliest moment. The Committee suggested that WHO could play an important part in many fields in the promotion and stimulation of programs against gonococcal infections.

The existing treatment policy is geared to continuing research into the microbiogenic relationship of host and organism in different parts of the world, in order to note and give warning of the degree, the time, and, if possible, the way in which strains of gonococci become less sensitive to various drugs. The results of such research in one country may provide the basis for prophylaxis in another. But new drugs are needed which have few or none of the disadvantages of high cost, side effects, relatively low effectiveness, etc. found in some current therapeutic agents. In the laboratory, research is required into the improvement and application of existing diagnostic techniques, and the evaluation of new ones lending themselves to uniform interpretation in different countries. There is particular need for a serological testing procedure suitable for population surveys in developing and developed countries. More suitable animals for laboratory research on neisseriae are also required. Finally, the ultimate hope for the solution of the many outstanding problems—particularly those related to the development of an immunizing agent and skin-testing procedures—lies in intensified fundamental biochemical and immunological research.

The Committee also emphasized the unlikelihood of eliminating infectious diseases by drugs alone, however effective, at least in conditions where the incubation period is short, no practical immunity is derived from the active infection, and no immunizing agent is available. —WHO Chronicle 18(1): 14-15, January 1964.

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Time-Temperature Effects on Salmonellae and Staphylococci in Foods

Robert Angelotti, Milton J. Foter, and Keith H. Lewis. Applied Microbiology 9(4): 308-315, July 1961.

Thermal death time studies were conducted at 5°F intervals from 130° to 150°F with strains of salmonellae and enterotoxigenic staphylococci. Heat-resistant Salmonella senftenberg strain 775W, Staphylococcus aureus strains 196E and Msl49, and non heat-resistant Salmonella manhattan were studied in custard, chicken a la king, and ham salad.

The F_{140} values (required minutes of exposure at 140°F to effect 100% destruction) were: S. senftenberg 775W in custard 78, in chicken a la king 81.5; S. manhattan in custard 19, in chicken a la king 3.1; S. aureus 196E in custard 59, in chicken a la king 47; S. aureus Msl49 in custard 53, in chicken a la king 40. Survival-kill at all the test temperatures for both salmonellae and staphylococci in ham salad were considerably less than for other foods studied.

D_{140} values (required minutes of exposure at 140°F to effect a 90% reduction in numbers) also were calculated from the data. Values for z_F and z_D (slope of the thermal death time and decimal reduction time curves) are discussed in relation to type of food, organism, and temperature.

These data indicate that heating perishable foods of the type studied to 150°F and holding every particle of the food at this temperature for at least 12 minutes reduces 10 million or less salmonellae or staphylococci per gram to nondetectable levels. This same degree of destruction is achieved in similarly contaminated foods when held at 140°F for 78 to 83 minutes.

Based on the calculation procedures employed, it is estimated that 45 minutes' exposure at 140°F would be necessary to reduce 1,000 organisms per gram to nondetectable levels.

* * * * *

Epidemiology of Salmonellosis

Philip R. Edwards PhD, Public Health Reports 78(12): 1087-1088, December 1963.

The Salmonella Surveillance Program of the Communicable Disease Center, Public Health Service, not only indicates an increased awareness and concern regarding salmonellosis, but it is also revealing a greater incidence of the

condition than previously was apparent from morbidity and mortality reports. As this study is expanded, the reported incidence of salmonellosis will increase but it must also be remembered that only a fraction, and probably a small fraction, of the cases are reported. As of now we have no method of assessing accurately the actual incidence of the disease.

Today, the great majority of reported incidents of salmonellosis are classified as sporadic cases. Yet it seems unlikely that many cases of salmonellosis are truly sporadic and not connected with other occurrences. Lack of demonstrated relations in such cases can be attributed only to the difficulties encountered in establishing causative connections between them. Among these difficulties may be the lapse of time in establishing etiologically identity of cases, lack of rapid collection of data on etiologically identical cases, the multiple pathways of infection to be investigated, and the lack of a sufficient number of properly trained personnel to undertake the intensive investigations required. National and international reporting of salmonellosis on a current basis, as described by Sanders and Newell, should solve some of these difficulties, and it is hoped that interest generated by such programs eventually will aid in the solution of others.

The occurrence of salmonellae in poultry and other animals, in animal feeds, and in foods for human consumption and the incidence and epidemiology of salmonellosis in man were discussed, but some facets of these discussions should be emphasized. The changing food habits of man and animals must be considered. Both man and his domestic livestock now consume foods which are mass produced and which frequently contain multiple ingredients prepared by a variety of subsidiary suppliers. This situation has resulted in a greater degree of contamination of food products with salmonellae than existed when foods and feeds were prepared in the individual kitchen and on the individual farm. This fact is amply confirmed by many reports in the literature. Galton, in particular, has spoken of increased incidence of salmonellosis in herbivorous animals and our experience supports this conclusion. This incidence seems to directly connected with the presence of the bacteria in feeds, since salmonellae of identical serotype and phage type have been found in infected animals and in the feeds they consumed.

The role of the human carrier, which has not been stressed in this discussion, should not be ignored. The isolation of such organisms as shigellae, *S. typhi* and *S. paratyphi A* from foods illustrates this role. Some years ago, Felsenfeld and Young in reviewing the literature found that 26 of 56 outbreaks of salmonellosis caused by nonhost-adapted serotypes were traced to human carriers. As McCroan mentioned, one must be careful to distinguish between culprits and victims in reviewing the carrier status of food handlers. Yet there would seem to be little doubt that the presence of salmonellae in the foods and carcasses with which the food handler is in continuous contact predisposes to the carrier state. Among this class of employees the repeated ingestion of small numbers of the bacteria may lead to the production of asymptomatic temporary carriers. Further, the particular vehicle by which salmonellae gain entrance to an area of food preparation probably is of secondary importance.

In the past the discrepancies in the reported percentile distribution of serotypes in man, animals, and egg products on the one hand and in foods and food ingredients on the other have been perplexing and disturbing. S. typhimurium is by far the predominant serotype in man, animals, and egg products, but it constitutes only a small percentage of the serotypes isolated from foods and feeds. Recently, the author was informed by Dr. E. Kampelmacher, National Institute of Health, Utrecht, the Netherlands, that if a sufficient number of samples of each lot of feed is examined, S. typhimurium can be found in a high percentage of the lots examined. Further, it must be admitted that little is known regarding the comparative invasiveness of the individual serotypes, as such, versus ability of individual strains of each serotype to produce disease. Such considerations must be taken into account in comparing the distribution of serotypes in foods and in clinical cases.

It is most encouraging that industry itself is taking a serious view of, and an active interest in, the presence of salmonellae in food and food ingredients. The efforts of Dr. G. M. Dack of the Institute of Food Research and of Dr. C. F. Niven, Jr., of the American Meat Institute Foundation have assisted materially in delineating the problems faced by the food industries of this country. They have investigated the presence of salmonellae in human foods and animal feeds and studied various sources and mechanisms of contamination. While the industries concerned are by no means insensitive to the public health aspects of salmonellae in food and food products and are motivated by the desire to market a wholesome product, it must also be admitted that the problem is not devoid of economic aspects.

When a large food processor insists that the ingredients which he purchases be free of salmonellae, a powerful incentive is provided the subsidiary supplier to produce an acceptable product. Requirements of this sort undoubtedly will be more generally adopted as the widespread distribution of salmonellae is more fully publicized and better understood. Further, there is continually more pressure brought upon the purveyor of livestock to supply animals that are thrifty and have a high livability. In many instances, flocks known to be infected are excluded as breeding stock.

Thus, one may adopt a rather optimistic outlook for future solution of many present problems. The ecology and control of the organisms are being studied more closely, and methods are gradually being devised to free food ingredients of salmonellae and to prevent contamination of the final products. These efforts, combined with those of the sanitarian and the epidemiologist, may be expected to have a salutary effect. However, it is essential to maintain and stimulate the interest which has been aroused among workers in medicine, public health, industry, and agriculture. This can be done only through continued investigation of the many aspects of salmonellosis and dissemination of the knowledge thus gained in such a manner that it is brought to the attention of all concerned.

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Did you know:

That it is anticipated that the WHO Filariasis Research Unit in Rangoon, established in October 1962 in collaboration with the Government of Burma, may one day become a filariasis research center for the whole of the South-East Asia Region and parts of the Western Pacific Region, providing consultant services to national health administrations, and training workers from the different countries concerned? (1)

That the first Expert Committee on the Control of Enteric Diseases to be convened by WHO met in Geneva from 12 to 18 November 1963, to review the numerous activities of WHO and of Member States in this field and to put forward recommendations for effective control measures against these diseases?

WHO has been engaged for many years on the study of enteric diseases. From 1953 to the present time, a comprehensive investigation of the effectiveness of enteric vaccines has been carried out. Field trials in Yugoslavia, USSR, British Guiana and Poland have covered more than 1 million people, and laboratory studies have been carried out in 20 laboratories throughout the world. The results of these studies show that certain enteric vaccines are highly effective in the control of typhoid fever, although the effectiveness of the paratyphoid component of the vaccines needs further study. International reference preparations of typhoid vaccines have been established recently by the WHO Expert Committee on Biological Standardization, and laboratory potency tests more reliable than those used in the past have been developed. (2)

That the Republic of Mongolia became a Member of the World Health Organization in 1963, and that the Organization is the first specialized agency of the United Nations to undertake a program of assistance in that country?

According to the plan of operations signed by the Government and WHO, the WHO team will work with the Ministry of Health in planning and carrying out a 5-year program of research into prevalent communicable diseases, such as gastrointestinal infections and zoonoses. Assistance by WHO in tuberculosis control and the organization of laboratory services will also be given, and fellowships will be granted to Mongolian health workers for studies abroad. (3)

That the estimated distribution of oral poliomyelitis vaccine sine 1954 had reached cumulative totals, as of October 1963, of 454,557,000 doses of inactivated vaccine, 79,634,000 doses of Type I oral vaccine, 66,436,000 doses of Type II, and 66,771,000 doses of Type III? (4)

That a 5-year study to determine what happens to pesticides after completing their tasks of killing insects is being undertaken at Rutgers University, New Brunswick, N. J. ? A grant of nearly \$200,000 has been made by the Public Health Service to finance the first year.

Among the questions the scientists will attempt to answer is whether a pesticide, such as DDT, is decomposed in the soil, leaches out of the soil into streams, or is taken up by weeds and food plants. Entitled "The Fate of Pesticides," the study will include how pesticides are retained or released in various types of clays and other soils, the interactions between pesticides and soil microorganisms, behavior in water, retention by fish, absorption and accumulation in plants and the possible formation of tumors or other cellular changes in animals. (5)

Bibliography:

- 1, 2, 3. WHO Chronicle 17(12), December 1963.
4. PHS Morbidity and Mortality Weekly Report 36(6): 31, February 5, 1964.
5. This Week in Public Health, Mass Dept Pub Hlth 13(8): 72, February 24, 1964.

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Research Projects Completed by U. S. Navy Preventive Medicine Unit No. 2

The following research projects were completed by U. S. Navy Preventive Medicine Unit No. 2 during 1963:

1. Field Evaluation of the RPR Card Test for Syphilis, Report No. 3960-LB-23, May 1963.
2. Evaluation of the Modified RPR Card Test for Syphilis, Report No. 3960-LB-24, June 1963.
3. Survival of Microorganisms in Stuart's Transport Media, Report No. M8-LB-26, June 1963.
4. Special Testing of Polyurethane Foam Rubber Mattresses, (Bacteriological), Report No. 3960-LB-32, Sept. 1963.
5. Special Testing of Neoprene Foam Rubber Mattress, (Bacteriological), Report No. 3960-LB-33, Dec. 1963.

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Malaria Eradication in 1962

WHO Chronicle 17(9): 335-350, September 1963.

The greatest advance in the malaria eradication program in 1962 was a large increase in the area transferred to the consolidation phase, the population of which rose to 243 million in 1962. This is the area where transmission of malaria has ceased long enough for the reservoir of infection in the population to reach such a low level that spraying operations can safely be stopped and replaced by surveillance. Out of a total population of 1,472 million in the originally malarious areas, there were 572 million people in areas that had reached the consolidation and maintenance phases in 1962, an increase of 44% over the number recorded in 1961. The greatest increase occurred in South-East Asia. Of the world previously endangered by malaria, 72% of the population receives the benefits of the malaria eradication program. Figure 1 (pg. 37) gives the epidemiological assessment of malaria in the world on 31 December 1962.

A Survey of the Regions. Africa. The only eradication programs in the African Region are on the islands of Mauritius and Zanzibar, and in Swaziland and the Republic of South Africa. Following the acceptance of a policy of pre-eradication programs in the less developed countries, the Regional Office for Africa in 1962 was engaged, at the request of the Governments concerned, in converting malaria eradication pilot projects into pre-eradication programs in Cameroon, Ghana, Mozambique, Northern Nigeria, Togo, and Uganda, and initiating new pre-eradication programs in Liberia, Madagascar, Mauritania, Nigeria (2), and Senegal.

The Americas. During the year, the attack phase was completed throughout British Honduras, Jamaica, Trinidad, and Tobago, and these areas entered the consolidation phase. In parts of Argentina, Bolivia, Colombia, Costa Rica, Guadeloupe, Guatemala, Honduras, Nicaragua, and the Panama Canal Zone, Peru, Surinam, and Venezuela, further areas were placed in the consolidation phase. Out of a total population of 153,891,000 in the originally malarious areas, 49,386,000 are in the attack phase and 13,753,000 in the preparatory phase. However, progress was not uniform throughout the Region. Administrative and financial deficiencies were responsible for setbacks in some areas.

South-East Asia. With the exception of Burma and Thailand, there has been an overall improvement in malaria eradication programs in the South-East Asian Region. Ceylon, which has the most advanced malaria eradication program in South-East Asia, recorded 31 malaria cases during the year and only 2 between July and December, both of which had come from the Maldives Islands.

The national malaria eradication program of India entered its 5th year of operation in 1962. Altogether 390 units, each covering over a million people, were in operation. In the 140 units, covering 153 million population, from which spraying was withdrawn during the year, only 1,632 positive slides were found during surveillance up to the end of September and not a single case was recorded from 56 out of 140 units in the consolidation phase. Early in 1963 an additional area, with a population of approximately 90 million, passed into the consolidation phase.

TABLE 1. MALARIA ERADICATION BY REGION ON 31 DECEMBER 1962

Region	Population in thousands								
	Total	Areas where malaria was never indigenous or disappeared without specific antimalaria measures	Areas originally malarious	Areas where malaria eradication claimed (maintenance phase)	Areas where eradication programmes are in progress				Areas where eradication programme not yet started
					Consolidation phase	Attack phase	Preparatory phase	Total	
Africa	172 434	14 815	157 619	3 278	1 435	1 155	—	2 590	151 751
The Americas	429 726	275 835	153 891	59 326	30 436	49 386	13 753	93 575	990
South-East Asia	634 678	35 238	599 440	1 467	162 028	381 060	9 191	552 279	45 694
Europe	698 861	391 937	306 924	245 744	30 026	12 987	—	43 013	18 167
Eastern Mediterranean	212 546	36 419	176 127	1 884	14 486	12 705	10 077	37 268	136 975
Western Pacific (excluding Mainland China, North Korea, and North Viet-Nam)	215 573	137 120	78 453	17 367	4 766	3 809	280	8 855	52 231
Total	2 363 818 (3 058 930) *	891 364	1 472 454	329 066	243 177	461 102	33 301	737 580	405 808

* The figure in parentheses includes the estimated population (of 695 112 thousand) of China (mainland), North Korea, and North Viet-Nam from which no other information is available.

The program in Indonesia showed a marked improvement. This program was assessed by a special evaluation team sent by WHO and the U. S. Agency for International Development (AID) during the last quarter of 1962. The assessment report stressed the operational efficiency of the program, but noted some failure to undertake systematic investigation and follow-up of positive cases.

Europe. Albania, Bulgaria, Greece, Portugal, Romania, Spain, the USSR, and Yugoslavia achieved objectives. The last zones in the attack phase still existing in those countries moved into the consolidation phase at the end of 1962. The eradication program is less advanced in Turkey, Algeria, and Morocco.

Eastern Mediterranean. Among the 25 countries or territories in the Eastern Mediterranean Region, one—Kuwait—is naturally free from malaria; four—Aden Colony, Cyprus, French Somaliland, and the Gaza Strip—have reached the maintenance phase and after satisfactory assessment of the situation, will be eligible for certification that malaria has been eradicated. Agreement was reached with the Government of Cyprus for such an assessment in 1963.

One-third of the total population of Israel is in areas that have reached the maintenance phase; the remaining territories are well advanced in the consolidation phase. The program in Iraq is at an advanced state. During the year, 90.5% of the total population in risk areas were in the consolidation phase. In Jordan, the areas under consolidation were expanded to cover almost 94% of the total population at risk. In Syria, territory covering 4/5 of the total population at risk is now in the consolidation phase.

The Pakistan program, in its second operational year, proceeded according to schedule. The attack operations were extended to protect a population of 4,400,000. The preparatory phase activities covered another 8,338,000 in the 2 parts of the country.

Western Pacific. About 1/3 of the 78 million people in the originally malarious areas of the Western Pacific Region (excluding Mainland China, North Korea, and North Viet-Nam) are now covered by eradication programs.

China (Taiwan), North Borneo, Sarawak, the Ryukyu Islands, and the Philippines, have full eradication programs. In the Federation of Malaya and the British Solomon Islands Protectorate, malaria eradication pilot projects are in operation.

Training of National Malaria Eradication Staff. Wherever possible, and particularly with non-professional staff, every effort is made to arrange that the various categories of personnel are trained in their own countries. Training outside the countries concerned may be necessary and desirable for limited numbers of staff at the professional level and staff in more responsible positions in large programs. Training courses at the established international training centers at Belgrade (Yugoslavia), Cairo (United Arab Republic), Sao Paulo (Brazil), Kingston (Jamaica), and Maracay (Venezuela) have continued.

(to be continued)

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RESERVE**SECTION**

ATTENTION: Reserve Nurse Corps Officers
on inactive duty

This is an excellent time for you to return to active duty if you are qualified and interested. We have vacancies due to normal attrition and increasing numbers for voluntary retirements. If you hold the rank of Lieutenant Junior Grade or Lieutenant and could complete 20 years of active duty before reaching age 55, you may apply. Application for recall to active duty NavPers 2929 may be obtained at the nearest naval recruiting station.

* * * * *

Reservists Eligible
For Tax Deductions
(continued)

Transportation, Travel Expenses

All travel and transportation allowances paid by the Navy Department when you are in a mileage or per diem status are considered to have been accounted for to your employer.

If you broke even—or if you do not choose to deduct excess expenses—you may simply answer "yes" to the questions relating to expense accounts on page 2, Form 1040, or check item 8, page 1, Form 1040A, and forget the matter. On the other hand, if allowances exceeded expenses, you should answer "yes" to the questions on page 2 of Form 1040, and enter the excess—labeled "excess reimbursements"—as "wages."

If you claim excess expenses—or if no allowances were authorized—all allowances, reimbursements and expenses must be listed. The excess expenses must be listed. The excess expenses are computed on IRS Form 2106 and deducted from your Navy pay, if any, before entering your net wages or expenses as "wages" on page 1 of Form 1040.

"Travel expenses" include meals and lodging of Reservists, who, under competent orders and with or without compensation, are required to remain away from their principal place of business overnight in the performance of authorized drills and training duty.

Reservists required to work and drill on the same day at each of two different locations within the same city or general area may deduct one-way "transportation expenses" in going from one place of business to another. When

they return home before drills, one-way expenses from home to place of drill, not to exceed expenses from place of work to place of drill, may be deducted.

Round-trip transportation expenses are deductible when the duty area is situated beyond the city or general area which constitutes the principal place of business, provided free transportation between these locations is not furnished by the Navy.

Expenses of an automobile would ordinarily include such items as gasoline, oil, minor repairs, depreciation, and the like. If you keep a record of all automobile expenses for the year, you can easily determine the amount of deduction for your drill trips. One way to do this is to take the ratio of the total mileage of your drill trips to the total mileage for the year, and apply that percentage of your total expenses for the year.

You can find additional information on income tax deductions in the pamphlet, Federal Income Tax Information for Service Personnel, prepared annually by the Judge Advocate General. Copies of this publication should be available at your Naval Reserve training center or the nearest naval activity.

—The Naval Reservist, March 1964.

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Reservist Eligible
For Tax Deductions
(continued)

Transportation, Travel Expenses

All travel and transportation allowances paid by the Navy Department when you are in a mileage or per diem status are considered to have been accounted for to your employer.

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expenses on page 1 of Form 1040.

"Travel expenses" includes meals and lodging of Reservists, who, under OFFICIAL BUSINESS

remain away from their principal place of business overnight in the performance of their duty.

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POSTAGE AND FEES PAID
NAVY DEPARTMENT